

**UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

DAO HEALTH,

Plaintiff,

v.

SHENZHEN LUTEJIACHENG TECHNOLOGY
CO., LTD.,

Defendant.

No. 23 C 4885

Judge Thomas M. Durkin

MEMORANDUM OPINION AND ORDER

Dao Health alleges that Shenzhen Lutejiacheng Technology Co., Ltd., has infringed three of its patents, including: two for breast milk collection devices (Patent numbers 7,559,915 and 8,118,772); and one for a related valve (Patent number 8,702,646). The parties dispute the meanings of seven terms used in the three patents. *See* R. 126; R. 134; R. 153. The Court held a claim construction hearing on March 5, 2025. The following is the Court’s resolution of the parties’ disputes.

I. “external suction source”

Patent ‘915 (claims 1, 2, 6, 7, 15, 16, 18, 33)

Patent ‘772 (claims 4, 5, 8)

The first disputed term is “external suction source,” which is used in the two patents for the breast milk collection devices. The parties’ dispute centers on the referent of the word “external,” such that the parties ask the Court to determine the object to which the suction source is external. Shenzhen argues that the term should be interpreted to mean “a suction source that is located outside of the brassiere cup,”

whereas Dao Health argues that it means “the suction source is located outside the internal volume of the reservoir.”

“The plain claim language [is] the starting point for [the] analysis.” *Sumitomo Dainippon Pharma Co. v. Emcure Pharms. Ltd.*, 887 F.3d 1153, 1157 (Fed. Cir. 2018). The words of a claim “are generally given their ordinary and customary meaning.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005).

Here, the term “external suction source” is first used in the first claim of Patent ‘915 in the following context:

The invention claimed is:

1. A breast milk collection device to be secured within and supported by an ordinary or nursing brassiere worn by a lactating woman, the collection device comprising:

a funnel shaped adaptor adapted to fittingly and sealingly receive the woman’s breast;

a reservoir having an internal volume, said internal volume adapted to collect said breast milk expressed from said woman’s breast, said internal volume of said reservoir sealed against exposure to the atmosphere;

said adaptor being received within said internal volume of said reservoir;

said internal volume adapted to be detachably connected to an **external suction source**, said suction source adapted to cyclically apply a vacuum pressure to the internal volume and relieve said vacuum pressure in said internal volume,

said cyclical application and relief of said vacuum pressure within the internal volume adapted to encourage the expression of breast milk from said breast; said reservoir adapted to allow the capture and collection of said breast milk in said reservoir.

R. 127-1 at 20 (JA0019) (emphasis added).

As described in claim 1, the invention consists of two primary components: (1) a “funnel shaped adaptor”; and (2) a “reservoir having an internal volume.” The first claim provides further that that “adaptor” is “received *within* [the] internal volume of [the] reservoir,” (emphasis added). Shenzhen does not dispute that the referent of the word “within” is the “internal volume of the reservoir.”

Unlike the “adaptor,” which is “within the internal volume,” the claim then provides that the “internal volume” can be “connected to an *external* suction source,” (emphasis added). It is plainly apparent from the order of these provisions in the claim—i.e., the fact that the provision about the “external suction source” immediately follows the provision about the adaptor being within the internal volume of the reservoir—that the word “external” is intended to be juxtaposed to the word “within.” Their common reference point is the reservoir. In other words, while the location of the “adaptor” is “*within* the internal volume of the reservoir,” the location of the “suction source” is “*external*” to the “internal volume of the reservoir.”

Shenzhen disagrees with this interpretation because claim 1 initially describes the invention as a “breast milk collection device to be secured *within* [a] brassiere,” such that, according to Shenzhen, the “external suction source should logically be construed as located *outside* the brassiere.” R. 126 at 9 (emphases added). This would

be a reasonable interpretation if not for the subsequent use of the word “within” noted above. Shenzhen is correct that the first provision of the claim defines the *device* with respect to its location inside the brassiere. But several provisions later, the claim is describing, not the location of the *device*, but the relative locations of the device’s *components*. As discussed, one of those components (the “adaptor”) is “within” the internal volume of the reservoir, whereas the other component (the “suction source”) is external to the internal volume of the reservoir. The first use of the word “within,” which Shenzhen relies upon, is less relevant than the later use of that word to determining the meaning of “external suction source,” because the description of the location of the components is more specific than the general location of the device. This means that, with respect to the location of the pump, the patent claims only a pump external to the reservoir, and it does not claim any further location of the pump, such as external to the brassiere.

Rather than directly address the most relevant claim language, Shenzhen primarily argues is that the “specification is consistent in distinguishing between pumps that are ‘internal’ as compared to those that are ‘external’ relative to a brassiere.” R. 126 at 9. The Court disagrees with this interpretation of the specification’s significance and instead finds that the Court’s interpretation of the claim’s plain language is in accord with the specification. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (“[C]laims “must be read in view of the specification, of which they are a part. [T]he specification is always highly relevant to the claim construction analysis.”).

The specification summarizes the invention as follows:

The present invention is a compact and hands-free human breast milk collection device that fits into a mother's existing nursing or standard brassiere. The invention can be attached to a regular electric pump or manual pump utilizing suction hoses for active milk collection and also can be used without a pump for passive milk collection.

R. 127-1 at 2 (JA0001). The specification also explains that the invention is intended to address the following needs in the industry:

Consequently, a need exists for a breast milk collection device which can fit completely within a woman's standard brassiere. Such a device would be less likely to interfere with breastfeeding from the opposite breast and avoid the isolating, disruptive, and sometimes embarrassing need to disrobe to pump breast milk.

A need also exists for a breast milk collection device that is both powerful and hands-free.

A further need exists for a breast milk collection device that provides a viable solution for passive milk collection while simultaneously breastfeeding.

Furthermore, a need exists for a breast milk pumping and collection device which can help compromised infants breastfeed.

Id. at 16 (JA0015).

The invention's description and objectives show that the location of the "suction source," or pump, is not integral to the invention, and the invention does not claim or disclaim any particular pump location, other than that it is not within the reservoir. Rather, the primary goal of the invention is to provide a "breast milk collection device that fits into a mother's existing nursing or standard brassiere," which can be used with "a regular electric pump or manual pump." Although the specification highlights

the device's compatibility with electric tabletop pumps that provide stronger suction than some examples of prior art discussed in the specification, this highlight does not disclaim the use of other types of pumps, including "manual pumps," which are weaker than tabletop pumps. True, tabletop pumps are "external" to the brassiere, and so are some manual pumps. Nevertheless, other than requiring that the pump be connected to the device using a hose, there is nothing in the specification claiming or disclaiming any particular location of the pump. The pump can be anywhere as long as it is not within the internal volume of the reservoir.

Shenzhen also relies on parts of the specification that compare the device to prior art. Shenzhen argues that the specification explains that the "greatest shortcoming" of an example of prior art known as "Whisper Wear," "is the use of a pump located within a brassiere." R. 126 at 9. But that is an incomplete quotation, and an inaccurate interpretation of how the specification describes Whisper Wear. Contrary to Shenzhen's implication, the specification states that "perhaps the greatest shortcoming of the Whisper Wear device when compared to the larger tabletop electric pumps is the strength of the suction it applies to the breast." R. 127-1 at 16 (JA0015). The specification makes this observation because the invention is designed to accommodate connection to a tabletop pump that is stronger than the pump included with the Whisper Wear device. True, the specification also criticizes Whisper Wear because its "weight and placement . . . within the bra can pinch some milk ducts." *Id.* But this observation serves to identify a benefit of how the invention

can be used—i.e., with a tabletop pump—and does not necessarily disclaim connection of the invention to a pump that can be secured inside the brassiere.

In further support of its interpretation of the claim, Shenzhen next points to part of the prosecution history. One of the invention’s inventors, Dan Garbez, submitted a declaration stating the following with respect to Whisper Wear, which was made by “Myers”:

Myers discloses a substantial comparatively heavy pump mechanism that is dome shaped so the entire mechanism can be supported within the bra, just as our funnel shaped adaptor and milk collection reservoir is. However, Myers’ milk collection reservoir is external to the lactating woman’s bra, to keep the lactated milk away from the pump. In relation to the woman’s bra, our pump is external, while our milk collection reservoir is internal, and Myers’ pump is internal, while his milk collection reservoir is external.

R. 127-1 at 170 (JA0169, ¶ 11). Shenzhen argues that these statements “operate as a clear and unmistakable disclaimer of coverage to suction sources that are contained in or supported by a women’s bra.” R. 126 at 11.

The significance Shenzhen attributes to Garbez’s statements, however, ignores their context. After the statement Shenzhen highlights, Garbez goes on to note that Myers placed the milk collection reservoir outside the brassiere to “avoid the potential for contamination . . . by channeling the milk safely away from the pump and into the distant collection bags.” R. 127-1 at 170 (JA0169, ¶ 12). He explains that a device with “an integrated milk storage reservoir . . . would risk contaminating [the] pump’s mechanism” and also “contaminate all milk pumped.” *Id.* at 171 (JA0170, ¶ 13). He also notes that combining the collection reservoir, the pump, and its battery, within

a single device “would only add more weight directly onto the lactating woman’s breast.” *Id.* And finally, Garbez concludes, “By contrast, our presently claimed invention achieves heavy duty suction, concealed use, hands free operation, a comfortable light weight device because *the pump works are not internal to our device*, and unexpected mobility with a hospital grade pump.” *Id.* (emphasis added). In other words, according to Garbez, the primary benefits of the ‘914 invention, are that the milk collection reservoir is within the bra, and the pump is external “*to our device.*”

This additional context reveals that the statements highlighted by Shenzhen are merely, as Dao Health argues, an example of Garbez providing a “comparison using a single exemplary embodiment in the form of a then-existing Dao prototype.” R. 134 at 10. In other words, the point of the comparison Garbez made was not to limit his invention, but to explain its differences and improvements upon a specific piece of prior art. Specifically, Garbez was highlighting the benefits of a milk collection device within the brassiere and the ability to connect to a strong tabletop pump that is outside the brassiere. But when read in conjunction with other statements in the declaration, and more importantly the specification and claim language itself, it is clear that the statement Shenzhen highlights describes only one possible use of the invention, and that Patent ‘915 is not limited to a device that connects to a pump that is external to the brassiere. To the extent there can be said to be any ambiguity created by Garbez’s statements, they do not constitute a “clear and unmistakable disavowal” of a device that connects to a pump located within the

brassiere. *See Vita-Mix Corp. v. Basic Holding, Inc.*, 581 F.3d 1317, 1324 (Fed. Cir. 2009).

In sum, taking account of the claim language, the specification, and the parts of the prosecution history the parties have highlighted, the invention here is a device that is located within the brassiere, and which does not contain a pump within the device. This means that the invention is a device that does not contain a pump within its reservoir's internal volume, but rather can be connected to a pump external to that volume. This interpretation applies equally to the use of the term in Patent '772. *See Cloud Farm Assocs. LP v. Volkswagen Grp. of Am., Inc.*, 674 F. App'x 1000, 1006 (Fed. Cir. 2017) ("The same term should be construed consistently throughout the same patent and any related patents sharing a common specification.").

**II. "a reduced volume within said reservoir . . .
said reduced volume formed within said drip tube"
Patent '915 (claim 16)**

The next disputed term is found in Claim 16 of Patent '915 (the first of the two patents for breast milk collection devices):

A breast milk collection device, comprising:

a funnel having a wide end adapted to receive a woman's breast therein and a narrow end opposite said receiving end, said narrow end tapering into a non-collapsible drip tube, said drip tube extending forwardly from said narrow end, said drip tube terminating at its distal end, said distal end having an aperture, said drip tube capable of resisting collapse under the force of negative suction pressure;

a reservoir enclosing said funnel therein to form a single unit with said funnel, wherein an internal volume of

said reservoir is adapted to receive breast milk through said aperture of said drip tube:

a reduced volume within said reservoir, said reduced volume adapted to be detachably connected to an external suction source, ***said reduced volume formed within said drip tube***, said suction source adapted to cyclically apply a vacuum pressure to said reduced volume and relieve said vacuum pressure in said reduced volume;

said cyclical application and relief of said vacuum pressure adapted to encourage the expression of breast milk from said breast;

said cyclical relieving of said vacuum pressure in said reduced volume adapted to allow the capture and collection of said breast milk in said reservoir;

and a valve attached to said distal end of said drip tube, said valve closing off said aperture and creating said reduced volume within said drip tube, said reduced volume cyclically becoming a high negative pressure zone upon introducing the external source of suction to said reduced volume, said high negative pressure zone adapted to encourage the expression of breast milk from said woman's breast.

R. 127-1 at 21 (JA0020) (emphases added).

Shenzhen argues that “the claim is invalid for indefiniteness.” R. 126 at 13. A claim is “indefinite” if “a person of ordinary skill in the art, with the aid of the specification, would [not] understand what is claimed.” *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1381 (Fed. Cir. 2015). Shenzhen has “the burden of proving indefiniteness by clear and convincing evidence.” *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017).

Shenzhen contends that the claim is indefinite because the “requirements” of the disputed terms “are internally inconsistent and against ordinary physical

constraints.” R. 126 at 13. Specifically, Shenzhen points out that the claim requires the “reduced volume” to be “adapted to be detachably connected to an external suction source,” and contends that “[i]t is not possible to connect an external suction source to empty space.” *Id.* Additionally, Shenzhen points out that the “reduced volume” created in the drip tube “is so created only when the valve is closed [b]ut when the valve is closed, the ‘drip tube volume’ is not a ‘reduced volume’ of a reservoir because it is separated from the reservoir.” *Id.* at 14.

Contrary to Shenzhen’s arguments, it is not difficult to comprehend how the drip tube is both “separated from” and a “reduced volume of a reservoir.” As noted above with regard to Claim 1, the “funnel shaped adaptor” is “received within [the] internal volume of the reservoir.” In other words, the tip of the funnel is inserted into the reservoir. Here, Claim 16 further describes the tip of the funnel as a “drip tube.” Once the drip tube is inside the reservoir, it becomes part of the reservoir’s volume, *despite* the fact that it is an identifiable, separate part of the reservoir’s volume. In other words—using the claim language—once inserted into the reservoir, the tip of the funnel, or drip tube, becomes “a reduced volume within said reservoir.” Not surprisingly, this area known both as the “reduced volume within the reservoir” and as the “drip tube,” can be closed off from the larger volume of the reservoir with use of a “valve.” With a “suction source” connected to the “reduced volume” or “drip tube,” and the valve closed, the suction source can create a vacuum in the area of the “reduced volume” or “drip tube” which encourages the breast to lactate.

There is simply no aspect of this claim that is indefinite, ambiguous, or confusing. The Court finds Shenzhen's arguments implying a lack of comprehension regarding how a smaller volume can still be part of a larger volume, or how a suction source can connect to empty space, to be unreasonable. The Court rejects those arguments.

III. "a valve assembly"

Patent '772 (claims 1, 2, 4, 5, 8, 11, 14, 26, 34)

The next disputed term—"a valve assembly"—is first found in Claim 1 of Patent '772, which is the second of the two patents for breast milk collection devices:

What is claimed is:

1. A breast milk collection device comprising:

a breast adaptor having a first receiving end adapted to fittingly and sealingly receive at least a portion of a woman's breast, the adaptor having a second end opposite the first end, the second end including a first aperture adapted to receive a nipple portion of the breast;

a reservoir coupled with and enclosing the adaptor to form a single unit with the adaptor, an interior volume of the reservoir adapted to receive breast milk produced from the woman's breast in said breast adaptor through the first aperture of the second end of the adaptor, the interior volume of the reservoir adapted to store the milk within a brassiere worn by a woman, the reservoir adapted to be supported by the brassiere;

a *valve assembly* disposed between and surrounded by the adaptor and the reservoir, the *valve assembly* alternately opening and closing fluid communication between the adaptor and the reservoir, and

the *valve assembly* creating a reduced volume in communication with said second end of said adaptor, said

reduced volume being less than said interior volume of said reservoir.

R. 127-1 at 55 (JA0054) (emphases added). Shenzhen explains that the “dispute for this term is whether the meaning of ‘assembly’ requires more than one part.” R. 126 at 15. Shenzhen argues that the term “a valve assembly” should be construed to mean “an assembly of multiple parts forming a valve,” whereas Dao Health argues that it should be given its plain and ordinary meaning.

The following parts of the specification are relevant to this determination:

ABSTRACT

* * * *

The *valve assembly* further includes an overflow chamber and a baffle structure to prevent backflow of milk into the pump and associated vacuum or suction line.

R. 127-1 at 22 (JA0021) (emphases added);

An additional need exists for a breast milk collection device having an overflow chamber and baffle combination that when the flow of breast milk is large in a single cycle, milk flows into the overflow chamber from a drip tube at an end of the breast adaptor before suction is released. When the overflow chamber is used, the mixture of milk and air in the drip tube can cause turbulence in the liquid, causing the milk to bubble and become airborne due to the suction force. The baffle in the overflow chamber deflects or redirects any air borne mist of milk that is pulled in the direction of the vacuum hose inlet port. In this way, bacteria-forming milk is kept from entering the pump’s inner works and suction hoses.

Id. at 46 (JA0045);

The *valve assembly* comprises a valve body, a valve cap mounted concentrically on the valve body, and a valve flap attached to the valve cap. The *valve assembly* further includes a baffle structure integrally formed with an interior wall of the valve cap and extending substantially

into an overflow chamber, to prevent the overflow of milk into the pump and associated vacuum lines before suction is released from a negative pressure cycle of the pump.

Another embodiment of the invention eliminates the baffle structure and fills much of the overflow assembly with a barrier comprising collapsible bladder whose internal volume is in direct communication with the assembly's vacuum hose port, and which barrier largely conforms to the interior surface of the overflow chamber when not subjected to negative pressure. When vacuum pressure is exerted into the collapsible bladder within the relatively more rigid overflow chamber, the bladder collapses in the direction of the vacuum inlet, and the negative pressure is communicated to the rest of the enclosure of the overflow chamber and the adaptor, directly applying the negative force on the breast, and ultimately inducing milk letdown, as has been described.

Id. at 46-47 (JA0045-46) (emphases added).

From these excerpts of the specification, it is clear that the invention includes “a valve assembly” that is comprised of more than one part. The “Abstract” at the beginning of the specification expressly provides that the “valve assembly . . . includes [1] an overflow chamber and [2] a baffle structure.”

This two-part valve assembly is further emphasized later in the specification as addressing one of the “needs” satisfied by the invention. The specification explains that a breast milk collection device that includes “an overflow chamber *and* baffle combination” ensures that “bacteria-forming milk is kept from entering the pump’s inner works and suction hoses,” (emphasis added).

Later the specification notes that there is a possible “embodiment of the invention that eliminates the baffle structure.” Nevertheless, even the alternative embodiment—which provides for “a barrier comprising collapsible bladder”—must,

according to the specification, include “a valve body, a valve cap mounted concentrically on the valve body, and a valve flap attached to the valve cap.” This description describes all possible “valve assemblies” claimed by the invention because it comes prior to any description of the particular embodiments. The fact that all embodiments include a “valve assembly” comprised of “a valve body, a valve cap mounted concentrically on the valve body, and a valve flap attached to the valve cap,” shows that the term “valve assembly” should be construed to mean “an assembly of multiple parts forming a valve,” which is the meaning which Shenzhen advocates.

Dao Health does not directly address the relevant claim or specification language. Instead, Dao Health argues that that “a valve assembly” cannot be defined with reference to “a valve,” because the term “a valve” is used more specifically later in Claim 31. *See* R. 134 at 16. But the term “a valve” is used in both Claims 1 and 31 in the same sense—i.e., to specify that “a valve” is being described. In other words, Claim 1 describes “a valve” that is “a valve assembly,” i.e., “a valve” formed by multiple parts, whereas Claim 31 describes “a valve assembly” that then specifically describes the location within the “valve assembly” of the part functioning as “the valve” (by “alternatively opening and closing”). This specification of the location of the opening and closing part of the valve assembly does not undermine the definition of “a valve assembly” as “an assembly of multiple parts forming a valve.”

Therefore, the Court adopts Shenzhen’s construction of “a valve assembly” to mean “an assembly of multiple parts forming a valve.”

**IV. “a valve assembly disposed between and surrounded by
the adaptor and the reservoir”
Patent ‘772 (claims 1, 2, 4, 5, 8, 11, 14, 26, 34)**

The next claim at issue is: “a valve assembly disposed between and surrounded by the adaptor and the reservoir.” Shenzhen argues that this claim from Patent ‘772 “is invalid for indefiniteness,” because “the patent specification does not explain how the valve assembly can be located between the adaptor and the reservoir and at the same time surrounded by them.” R. 126 at 17.

This argument ignores the plain meaning of the words “between” and “surround.” The word “between” means “in the . . . space . . . that separates.” *See* Merriam-Webster.com Dictionary, accessed Dec. 11, 2025. The word “surround” means “to enclose on all sides.” *Id.* And plainly, when something is “enclosed” by other things it is necessarily “in the space that separates” whatever things is enclosed by. There is nothing indefinite or confusing about the observation that something that is between two things is often also surrounded by those two things. This is a straightforward concept, easily exemplified by the landlocked country of Nepal, which is both between China and India and surrounded by them.

Similarly, the “valve assembly” is between “the adaptor” on one side and “the reservoir” on the other, such that the “valve assembly” is also “surrounded” by “the adaptor” and “the reservoir” when taken together. For this reason, the term “a valve assembly disposed between and surrounded by the adaptor and the reservoir,” is given its plain and ordinary meaning.

**V. “a distal end of said drip tube having an aperture adjacent the distal end”
Patent ‘646 (claims 1, 2, 3)**

Shenzhen contends that this term contained in Patent ‘646 should be interpreted to include the word “structure,” such that “a distal end of said drip tube having an aperture adjacent the distal end” means “a distal end *structure* of said drip tube having an aperture adjacent the distal end *structure*.” Dao Health argues that the plain and ordinary meaning should control. But Shenzhen argues that plain and ordinary meaning is “unhelpful” because “[t]he Court should clarify whether ‘an aperture *adjacent* the distal end’ can be located *at* the distal end, thereby making it an ‘open’ distal end in Dao’s parlance.” R. 153 at 11 (emphases added). Shenzhen supports this argument by pointing out that certain embodiment drawings in Patent ‘772 show the aperture opening going through the distal end such that it could be said to be “open,” whereas certain embodiment drawings in Patent ‘646 show the aperture opening “adjacent” to a “closed” distal end of the drip tube. Shenzhen hopes to “clarify” this difference by adding the word “structure” to the term at issue in Patent ‘646 to emphasize that the distal end is “closed.”

The Court does not see a need for clarification of this term. The claim unambiguously states that the aperture opening is located “adjacent the distal end.” Adding the word “structure” does not clarify the meaning of that term.

Perhaps Patent ‘646 claims only a “distal end” that is “closed,” and disclaims a “distal end” that is “open.” This seems to be Shenzhen’s true concern with attempting to add the word “structure” to the disputed term. But even if this is an appropriate

goal of claim construction, the Court disagrees that the addition of the word “structure” accomplishes the goal Shenzhen contends that it does.

Therefore, the claim term “a distal end of said drip tube having an aperture adjacent the distal end” will be given its plain and ordinary meaning.

**VI. “cyclical application and relief of said vacuum pressure adapted to encourage the expression of breast milk from said breast”
and
“said cycle portion relieving said vacuum pressure adapted to allow the capture and collection of said breast milk in said reservoir”
Patent ‘646 (claims 1, 2, 3)**

Shenzhen argues that these claim terms are indefinite because they use “only functional language in [the] requirement of cyclical application and relief of vacuum pressure and a ‘cycle portion’ without the recitation of any structure, and a [person of ordinary skill in the art] would have no understanding as to what, if any, additional structure is necessary to satisfy the claim.” R. 126 at 23. In other words, Shenzhen argues that these claims terms are indefinite because they do not identify the “structure” that produces the “cyclical vacuum pressure” addressed in the claim. *See id.* at 22. More specifically, Shenzhen points out that the claims refer to “*said* vacuum pressure” and “*said* cycle portion” without an antecedent defining these terms. *See id.* (emphasis added). Dao Health argues that the inclusion of the word “said” should be considered a typographical error that should be deleted without replacement from

before the term “vacuum pressure” and replaced by the word “a” before the term “cycle portion.”

The Federal Circuit has repeatedly found that “the failure to provide explicit antecedent basis for terms does not always render a claim indefinite.” *Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1370 (Fed. Cir. 2006). Rather, “despite the absence of explicit antecedent basis, if the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite.” *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1376 n.5 (Fed. Cir. 2008). This means that an “antecedent basis can be present by implication.” *Pinpoint Inc. v. Hotwire, Inc.*, 2013 WL 1174688, at (N.D. Ill. Mar. 20, 2013). And when “the meaning of the claim would reasonably be understood by persons of ordinary skill when read in light of the specification, the claim is not subject to invalidity upon departure from the protocol of ‘antecedent basis.’” *Energizer*, 435 F.3d at 1370.

Review of the specification shows that the claims at issue are not indefinite. The specification of Patent ‘646 provides the following:

The present invention is an improved valve system for a compact and hands-free human breast milk collection device that fits into a mother’s existing nursing or standard brassiere. ***The device which contains this improved valve system can be attached to a conventional electric or manual vacuum pump*** for milk collection.

* * * *

In an embodiment, the flexible membrane is a duckbill valve, whose outer walls, when submersed, are compressed by the fluid pressure of the milk collected in the reservoir, closing the valve and preventing the

backflow of milk into the breast adaptor even in the absence of negative pressure from the pump. When ***vacuum pressure*** is applied to the valve, the vacuum pressure pulls the interior walls of the duckbill valve together by exerting negative pressure on the valve interior wall surfaces, which closes the valve. When ***the pump is in the positive pressure range of its cycle***, the valve opens, allowing milk to flow into the collection container, and then the valve closes again during ***the negative pressure range of the cycle, or after pumping*** when it turned off or disconnected. ***As the pump's cycle alternates from negative to positive or ambient pressure***, the fluid pressure on the duckbill valve from the milk in the reservoir keeps the valve closed until positive pressure advances the milk from the drip tube and the valve assembly, forcing the duck bill valve into an open position, and the milk flows into the reservoir.

R. 127-1 at 63 (JA0062) (emphasis added).

These excerpts from the specification unambiguously show that “the pump” is the device that provides the “vacuum pressure” in a “cycle” that “alternates.” This is unsurprising because “pumps” are generally the kind of device that can produce vacuum pressure in an alternating cycle. There is no dispute that in order for the invention in Patent ‘646 to perform its function, it must be attached to a pump that can provide vacuum pressure in alternating fashion. Thus, “the pump” is the device referred to by the claims at issue.

The only basis for Shenzhen to argue that the claims are indefinite is the use of the word “said” before the terms “vacuum pressure” and “cycle portion.” In effect, Shenzhen argues that that word “said” begs the questions, “what vacuum pressure?” and “what cycle portion?” But in light of the specification and the rest of the claim language, it is clear that the vacuum pressure and cycle portion are created by the

pump necessary to make the invention work. The Court agrees with Dao Health that the inclusion of the word “said” should be considered a typographical error that should be deleted without replacement from before the term “vacuum pressure” and replaced by the word “a” before the term “cycle portion.”

**VII. “through said interior chamber”
Patent ‘646 (claim 3)**

Here again, Shenzhen argues that this claim from Patent ‘646 is indefinite because the claim “lacks antecedent basis” for the term “interior chamber,” and Dao Health again argues that this is a typographical error such that the word “said” should be replaced with the word “an.” Here are the relevant claim terms:

What is claimed is:

1. A breast milk collection device, comprising:

* * * *

said aperture in said drip tube and said second aperture in said sleeve communicating between said drip tube and **said valve element**.

2. The breast milk collection device of claim 1, wherein:

said valve assembly includes a valve mounting assembly having **an interior chamber** extending between said aligned aperture in said drip tube and said second aperture in said sleeve, and said valve element, **said interior chamber** adapted to convey breast milk from said aligned apertures in said drip tube and said sleeve to said valve element.

3. The breast milk collection device of claim 1, wherein:

said valve element opens during said cycle portion relieving vacuum pressure in said drip tube, said opening of said valve element adapted to allow milk to advance from said drip tube **through said interior chamber** and into said reservoir.

R. 127-1 at 65 (JA0064) (emphasis added).

Both claim 2 and claim 3 reference the term “interior chamber.” Claim 2 initially introduces the term “interior chamber” with the word “an.” Having established the term “interior chamber” in this manner, claim 2 then refers to that term again using the word “said.” In claim 2, the interior chamber is necessary to convey breast milk through the valve assembly.

Similarly, in claim 3 the “interior chamber” is the part of the “valve element” that permits “milk to advance” from the drip tube into the reservoir. Unlike claim 2, claim 3 uses the term “interior chamber” only once.

Shenzhen does not argue that the term “interior chamber” is indefinite as used in claim 2, where it is first introduced with the word “an” and subsequently used following the word “said.” In other words, Shenzhen does not argue that the idea of an “interior chamber” conveying milk as part of a valve device is indefinite or otherwise confusing to a person of ordinary skill in the art. Shenzhen merely argues that use of the word “said” preceding “interior chamber” is an indefinite reference. But with claim 3 immediately following claim 2, it is clear that the use of the term “interior chamber” in claim 3 would be understood, by a person of ordinary skill in the art, to mirror its use in claim 2. For that reason, a person of ordinary skill in the art would understand that the use of the word “said” in claim three is a typographical error that should be replaced with the word “an.”

Shenzhen argues that even replacing the word “said” with the word “an,” a person of ordinary skill in the art “would not know where the ‘interior chamber’ is located,” because “unlike claim 2, there is no requirement in claim 3 of . . . any

specification for where the interior chamber is located,” such as the “valve mounting assembly” referenced in claim 2. *See* R. 126-1 at 19.

This argument ignores the rest of the language of claim 3. Claim 3 unambiguously explains that the “interior chamber” is situated between the “drip tube” and the “reservoir,” and separated from the “drip tube” by a “valve element,” such that it allows milk “to advance from said drip tube . . . into said reservoir.”

Furthermore, claim 3 is dependent on claim 1—claim 1 concludes with reference to the “valve element,” and then claim 3 begins with reference to the “valve element.” In other words, the “interior chamber” in claim 3 is located with reference to the “valve element,” which has already been defined in claim 1, along with “drip tube” and “reservoir,” which are the other relevant terms in claim 3. Shenzhen does not argue that any term in claim 1 is indefinite. Thus, the undisputed clarity of claim 1’s description of the “valve element,” and its relation to the “drip tube” and “reservoir,” extends to the use of “interior chamber” in claim 3 in relation to these terms. As long as the word “said” is replaced with the word “an,” the claim “through said interior chamber” is sufficiently definite for a person of ordinary skill in the art to understand the claim according to its ordinary meaning.

ENTERED:

A handwritten signature in black ink, reading "Thomas M. Durkin". The signature is written in a cursive, flowing style.

Honorable Thomas M. Durkin
United States District Judge

Dated: December 12, 2025